

We claim:

1. A liquid filter construction comprising:
 - (a) a metal baffle plate having an inlet arrangement and an outlet arrangement;
 - (i) said metal baffle plate having an average cross-sectional thickness of at least 0.080 inch;
 - (b) a metal can having an interior and an average cross-sectional wall thickness different than that of said metal baffle plate thickness; said metal can average cross-sectional wall thickness being at least 0.008 inch;
 - (i) said metal can being secured to said steel baffle plate along a laser welded seam; and
 - (c) a filter element operably oriented within said interior of said metal can.

SUB A8

- 2.* A liquid filter construction according to claim 1 wherein:
 - (a) one of said inlet arrangement and said outlet arrangement defines a tubular member having an outer, annular surface; and
 - (b) said filter element includes at least a first end cap and a media pack secured to said first end cap.
3. A liquid filter construction according to claim 2 further comprising:
 - (a) a radially directed seal between said first end cap and said outer, annular surface of said tubular member.
4. A liquid filter construction according to claim 3 wherein:
 - (a) said baffle plate includes an inner surface oriented within said can interior, and an opposite outer surface remote from said can interior;
 - (i) said baffle plate including a channel in said outer surface constructed and arranged to hold a seal member.
5. A liquid filter construction according to claim 4 wherein:

- (a) said first end cap includes a plurality of axially extending protrusions engaging said inner surface of said baffle plate; and
- (b) said first end cap radially abuts said outer, annular surface of said tubular member to form said radially directed seal.

6. A liquid filter construction according to claim 5 wherein:

- (a) said filter element further includes a second end cap and an inner liner;
 - (i) said media pack extending between said first end cap and said second end cap
 - (ii) said media pack circumscribing said inner liner.

7. A liquid filter construction according to claim 6 further including:

- (a) a rigid structural member oriented in said can interior;
 - (i) said rigid structural member abutting an end of said can remote from said baffle plate and supporting said filter element.

8. A liquid filter construction according to claim 7 wherein:

- (a) said rigid structural member is secured to said second end cap.

9. A liquid filter construction according to claim 7 wherein:

- (a) said rigid structural member is an integral part of said inner liner.

10. A liquid filter construction according to claim 7 wherein:

- (a) said rigid structural member comprises a bypass valve assembly.

11. A liquid filter construction according to claim 6 wherein:

- (a) said second end cap includes a plurality of radially directed protrusions engaging an inner portion of said can.

12. A liquid filter construction according to claim 6 wherein:

- (a) said media pack comprises pleated paper potted within said first and second end caps;

- (b) said first and second end caps comprise urethane or acrylic; and
- (c) said inner liner comprises a rigid, plastic material.

13. A liquid filter construction according to claim 1 wherein:

- (a) said baffle plate is steel and has an average cross-sectional thickness of no greater than 3.0 in.;
- (b) said can is steel and has an average cross-sectional wall thickness of no greater than 0.048 in.

14. A liquid filter construction according to claim 13 wherein:

- (a) said baffle plate has an outer annular surface;
 - (i) said laser welded seam being between said can and said outer annular surface of said baffle plate.

15. A liquid filter construction according to claim 1 wherein:

- (a) said filter element is sealed against said baffle plate by an axially directed seal.

16. A filtration system comprising:

- (a) an engine having a size of at least 10 hp and a lubrication system; and
- (b) a filter construction operably mounted to clean liquid flowing in said lubrication system; said filter construction including:
 - (i) a metal can having an interior and a first average cross-sectional wall thickness;
 - (ii) a metal baffle plate having an inlet oriented to take in liquid to be cleaned for said lubrication system and an outlet oriented to exhaust cleaned liquid;
 - (A) said metal baffle plate having a second average cross-sectional thickness; the second average cross-sectional wall thickness being at least 200% of the first average cross-sectional wall thickness;
 - (B) said metal can being secured to said metal baffle plate along a laser welded seam; and

(iii) a filter element operably oriented within said interior of said metal can.

17. A filtration system according to claim 16 wherein:

(a) said lubrication system is constructed and arranged to operate at pressures no greater than about 200 psi.

18. A filtration system according to claim 16 wherein:

(a) said filter element having at least a first end cap and a media pack secured to said first end cap;

(i) said first end cap radially abutting said outer, annular surface of said tubular member to form a radially directed seal between said first end cap and said tubular member.

19. A method of constructing a filter; the method comprising:

(a) inserting a filter element into a metal can; the metal can having at least one open end and a first average cross-sectional wall thickness;

(b) covering the one open end with a metal baffle plate; the baffle plate having a second average cross-sectional thickness;

(i) the second average cross-sectional thickness being at least 200% of the first average cross-sectional wall thickness; and

(c) securing the baffle plate to the can by laser welding.

20. A method according to claim 19 wherein:

(a) said step of securing includes laser welding at least first and second, spaced tacks between the baffle plate and the can and then laser welding at least a 360° seam between the baffle plate and the can;

(i) the first average cross-sectional wall thickness of the can being at least 0.008 inch; and

(ii) the second average cross-sectional wall thickness of the baffle plate being at least about 0.08 inch.

21. A method according to claim 19 wherein:

(a) said step of securing includes laser welding at least first and second, spaced tacks between the baffle plate and the can; the first and second tacks being spaced about 160°-200° apart.

22. A method according to claim 19 further including:

(a) assembling the filter element by:

(i) securing a tubular construction of filtering media between first and second opposite end caps; the first end cap having an inner, annular surface defining a first opening; and

(ii) pressing a rigid structural member into the second end cap;

(b) inserting a neck of the baffle plate into the first opening and forming a radially directed seal between the neck and the first end cap;

(c) wherein said step of inserting includes placing the filter element in the can, until the rigid structural member abuts an end of the can; and

(d) wherein said step of covering includes engaging the baffle plate against the first end cap.

23. A method according to claim 19 wherein:

(a) said step of securing includes laser welding at a speed of at least 400 inches/minute.